

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Algebra 1B Pd: \_\_\_\_\_

**Weekend Word Problem #15: Polynomials and Construction**

**The Situation:** The Class of 2019 is designing a framed mural for a wall of the new school. The total width of the mural and the frame combined is two inches more than four times the height of the mural and the frame combined. The frame itself is ten inches wide on all sides.

1. Choose a variable for the height of the mural and frame combined.

2. Write an expression for the width of the mural and the frame combined, in terms of the height.

3. Draw a sketch of the mural and frame. Label all relevant parts.

4. Using the sketch and your variables, write a simplified expression in standard form for the total area of the mural and the frame.

5. Using the sketch and your variables, write an expression for the width of the mural only.

6. Using the sketch and your variables, write an expression for the height of the mural only.

7. Write a simplified expression in standard form for the total area of the mural only.

8. Using your answers from #4 and #7, write a simplified expression in standard form for the area of the frame only.

9. The Class of 2019 wants to paint the frame gold and has enough paint to cover nine thousand, six hundred forty square inches. According to this restraint, what should the height and width of the MURAL ONLY be?

10. Discuss your problem solving process. Include any problems and/or breakthroughs. Write at least FOUR QUALITY COMPLETE SENTENCES.

---

---

---

---

---

---

---

---

---

---

---